Listing of Claims

Claim 1 (Currently Amended): A method of processing orders related to a family of products in a supply chain management system, said family of products containing a plurality of member items, said plurality of member items having similarities in resource requirements, said method comprising:

receiving in a computer system a time fence (TF) duration associated with each of said plurality of member items ~~in relation to a~~ in pair with a first member item, wherein said first member item is also contained in said plurality of member items of said family, wherein said TF duration associated with a member item in pair with said first member item represents ~~representing~~ an amount of advance time duration after which the supply of ~~the corresponding~~ that member item is available to satisfy the demand for said first member item;

receiving in said computer system a first order specifying a first required quantity of said first member item and a first required date, wherein said first required date is after said TF duration from a time said first order is received, and wherein only Qavail units of said first member item are scheduled to be available as of said first required date, wherein Qavail is less than said first required quantity;

determining in said computer system ~~whether at least said first quantity~~ a first available quantity of all of said plurality of member items ~~is~~ scheduled to be available after said TF duration and as of said first required date, and a second available quantity of said first member item scheduled to be available as of end of said TF duration; and

~~promising~~ indicating in said computer system that said first order be promised if said determining determines that said first available quantity and said second available quantity ~~at least said first quantity of all of said plurality of member items is~~ scheduled to be available as of said first required date is sufficient to fulfill said first required quantity.

Claim 2 (Currently Amended): The method of claim 1, wherein said TF duration equals aggregate TF (ATF) duration when said TF duration is equal for all pairs of member items. ~~contained in said plurality of member items, and wherein said TF duration equals aggregate TF (ATF) duration~~.

Claim 3 (Currently Amended):   The method of claim 2, if said determining determines that at least said first required quantity of all of said plurality of member items

is not scheduled to be available as of said first required date, further comprising:

computing an ATP date in which said first <u>required</u> quantity of said first member item will be available based on <u>said available first required quantity and said available second quantity; and</u> ~~availability of number of units of said member item available as of the end of said ATF duration and number of units of all of said plurality of member items after said ATF duration; and~~

accepting said first order with a promise date equaling said ATP date.

Claim 4 (Original): The method of claim 3, wherein a user is provided an option to indicate whether said ATP date is acceptable, wherein said accepting is performed only if said user indicates that said ATP date is acceptable.

Claim 5 (Currently Amended): The method of claim 3, further comprising:

if said first <u>required</u> ~~requested~~ quantity is greater than <u>Qatp less Qatf</u> ~~(Qatp-Qatf)~~, allocating <u>Qatp less Qatf</u> ~~(Qatp-Qatf)~~ on said first ~~requested~~ <u>required</u> date from all of said plurality of member items and ~~(Qreq - Qatp + Qatf)~~ <u>allocating Qreq minus Qatp less Qatf</u> at an end day of said ATF duration from said first member item,

if said first <u>required</u> ~~requested~~ quantity is less than or equal to <u>Qatp less Qatf</u> ~~(Qatp-Qatf)~~, allocating said first <u>required</u> ~~requested~~ quantity on said ATP date,

wherein Qatp represents the aggregate available units as of said ATP date from all of said plurality of member items, Qatf represents the aggregate available units of said first member item at the end of said ATF duration, and Qreq equals said first <u>required</u> ~~requested~~ quantity.

Claim 6 (Currently Amended): The method of claim 3, further comprising:
checking whether an override flag is associated with said first order; and
accepting said first order if said override flag is associated with said first order even if said determining determines that at least said first <u>required</u> quantity ~~of all of said plurality of member items is not scheduled to be available~~ <u>cannot be fulfilled</u> as of said first required date,

wherein said computing and accepting with said promise date are performed only if said override flag is not associated with said first order.

Claim 7 (Original): The method of claim 6, further comprising rejecting said order if said override flag is not associated with said first order and if said ATP date is not acceptable to a user placing said first order.

Claim 8 (Currently Amended):   The method of claim 6, if said override flag is associated with said first order, further comprising:

allocating Qreq less Qatf (Qreq Qatf) on said first requested date and Qatf on the last day of said ATF duration, wherein Qatf represents the aggregate available units of said first member item at the end of said ATF duration, and Qreq equals said first requested required quantity.

Claim 9 (Currently Amended): The method of claim 2, further comprising:

computing in said computer system said first available quantity as an aggregate of a present family availability, indicated by indicating an aggregate quantity of all of said plurality of member items available on each day after said ATF duration, as of on said first required date;

allocating in said computer system a first portion from said present family availability and a second portion from said second available quantity scheduled to be available for said first member item as of end of said ATF duration.

Claim 10 (Currently Amended): The method of claim 9, further comprising:

computing in said computer system a cumulative item an aggregate of availability for said first member item in for each day in as of end of said ATF duration in order to compute said second available quantity;, and

maintaining in said computer system said present family availability associated with each day after said ATF duration; and[[,]]

computing a cumulative item availability for each day after the ATF duration as the sum of said second available quantity and aggregate of said present family availability as of that day,

wherein said determining comprises examining said cumulative item availability and said present family availability such that said determining can be performed quickly.

Claim 11 (Currently Amended):   The method of claim [[9]] 10, wherein said

determining comprises:

performing a first comparison of said first <u>required</u> quantity and [[(]] <u>difference of</u> said ~~present family~~ <u>cumulative item</u> availability as of said required date [[-]] <u>and</u> said ~~cumulative item availability at~~ <u>second available quantity as of</u> the end of said ATF duration<u>;</u>~~), wherein ' ' indicates a subtraction operation;~~

if said first comparison provides a less than result, said second portion equaling 0, and said first portion being allocated from <u>aggregate of</u> said present family availability ~~on~~ <u>as of</u> said first required date; and

if said first comparison provides a greater than or equal to result, said first portion equaling [[(]] <u>difference of</u> said ~~present family~~ <u>cumulative item</u> availability as of said required date [[-]] <u>and</u> said ~~cumulative item availability at~~ <u>available second quantity as of</u> the end of said ATF duration[[)]], and said second portion equaling said ~~required~~ <u>first required</u> quantity less said first portion.

Claim 12 (Currently Amended): The method of claim 2, further comprising:

receiving in said computer system a third order specifying a third quantity of said first member item and a third required date, wherein said third required date is within said ATF duration, wherein said third quantity is less than or equal to said ~~cumulative item availability~~ <u>second available quantity of said first member item as</u> on said third required date; and

promising in said computer system that said third order can be promised.

Claim 13 (Currently Amended): The method of claim 2, further comprising:

receiving in said computer system a fourth order specifying a fourth quantity of said first member item and a fourth required date, wherein said fourth required date is within said ATF duration, wherein said fourth quantity is greater than said ~~cumulative item availability~~ <u>second available quantity of said first member item as</u> on said fourth required date;

determining said ~~cumulative item availability (Qatf)~~ <u>second available quantity, Qatf,</u> at the end of said ATF duration;

checking if said fourth quantity is less than or equal to said Qatf; and

if said fourth quantity is less than or equal to said Qatf, checking in said computer system whether a first override flag is associated with said fourth order, and allocating

said fourth quantity on said fourth required date if said first override flag is associated with said fourth order.

Claim 14 (Original): The method of claim 13, if said fourth quantity is less than or equal to said Qatf and if said override flag is not associated with said fourth order, further comprising:

determining a date Xatp on which said fourth quantity is available; and

accepting said fourth order only if a promise date of said Xatp is acceptable to a user placing said fourth order.

Claim 15 (Original): The method of claim 14, further comprising rejecting said fourth order if said override flag is not associated with said fourth order and if said Xatp is not acceptable as said promise date to said user.

Claim 16 (Currently Amended): The method of claim 13, if said fourth quantity is greater than said Qatf, further comprising:

checking whether an override flag is associated with said fourth order;

if said override flag is associated with said fourth order, allocating Qatf on said fourth required date and [[(]] said fourth required quantity less said Qatf [[)]] on a day following said ATF duration.

Claim 17 (Currently Amended): The method of claim 16, if said fourth quantity is greater than said Qatf and if said override flag is not associated with said fourth order, said method comprising:

computing in said computer system a date Xatp (Xatp) after said fourth required date and a corresponding Qatp on which said fourth quantity is available;

checking in the said computer system whether said Xatp is acceptable as a promise date; and

rejecting said fourth order [[is]] if said Xatp is not acceptable as a promise date.

Claim 18 (Currently Amended): The method of claim 17, if said Xatp is acceptable as a promise date, further comprising:

performing a fourth comparison in said computer system to determine whether

said fourth quantity is less than or equal to Qatp minus Qatf; (Qatp-Qatf);

if said fourth quantity is less than Qatp minus Qatf (Qatp-Qatf), allocating said fourth quantity on said ATP date;

if said fourth quantity is greater than Qatp minus Qatf (Qatp-Qatf), allocating said Qatp minus Qatf (Qatp-Qatf) on said ATP date and [[(]] said fourth quantity [[-]] minus Qatp plus [[+]] Qatf [[)]] on last day of said ATF duration.

Claim 19 (Original): The method of claim 2, further comprising:

receiving a request to un-schedule one of a previously promised orders;

determining whether said previously promised order is based on a tenth quantity scheduled to be available within said ATF duration;

using said tenth quantity to meet unmet demands related to the same member item as the member item for which said previously promised order relates to.

Claim 20 (Original): The method of claim 19, further comprising:

determining whether said previously promised order is based on an eleventh quantity scheduled to be available after said ATF duration;

using said tenth quantity to meet unmet demands related to any of said plurality of member items.

Claim 21 (Currently Amended): A computer readable storage medium carrying one or more sequences of instructions for causing a computer system to process orders related to a family of products in a supply chain management system, said family of products containing a plurality of member items, said plurality of member items having similarities in resource requirements, wherein execution of said one or more sequences of instructions by one or more processors contained in said computer system causes said one or more processors to perform the actions of:

receiving in a computer system a time fence (TF) duration associated with each of said plurality of member items in-relation-to-a in pair with a first member item, wherein said first member item is also contained in said plurality of member items of said family, wherein, said TF duration associated with a member item in pair with said first member item represents representing an amount of advance time duration after which the supply

of ~~the corresponding~~ that member item is available to satisfy the demand for said first member item;

receiving a first order specifying a first <u>required</u> quantity of said first member item and a first required date, wherein said first required date is after said ATF duration from a time said first order is received, and wherein only Qavail units of said first member item are scheduled to be available as of said first required date, wherein Qavail is less than said first <u>required</u> quantity;

determining ~~whether at least said first quantity~~ <u>a first available quantity</u> of all of said plurality of member items ~~is~~ scheduled to be available <u>after said TF duration and</u> as of said first required date<u>, and a second available quantity of said first member item scheduled to be available as of end of said TF duration</u>; and

~~promising~~ <u>indicating that</u> said first order <u>be promised</u> if said determining determines that <u>said first available quantity and said second available quantity</u> ~~at least said first quantity of all of said plurality of member items is~~ scheduled to be available as of said first required date <u>is sufficient to fulfill said first required quantity</u>.

Claim 22 (Currently Amended): The computer readable <u>storage</u> medium of claim 21, wherein <u>said TF duration equals aggregate TF (ATF) duration when</u> said TF duration is equal for all pairs of member items<u>.</u> ~~contained in said plurality of member items, and wherein said TF duration equals aggregate TF (ATF) duration.~~

Claim 23 (Currently Amended): The computer readable <u>storage</u> medium of claim 22, if said determining determines that at least said first <u>required</u> quantity of all of said plurality of member items is not scheduled to be available as of said first required date, further comprising:

computing an ATP date in which said first <u>required</u> quantity of said first member item will be available based on <u>said available first required quantity and said available second quantity; and</u> ~~availability of number of units of said member item available as of the end of said ATF duration and number of units of all of said plurality of member items after said ATF duration; and~~

accepting said first order with a promise date equaling said ATP date.

Claim 24 (Currently Amended): The computer readable <u>storage</u> medium of claim

23, wherein a user is provided an option to indicate whether said ATP date is acceptable, wherein said accepting is performed only if said user indicates that said ATP date is acceptable.

Claim 25 (Currently Amended): The computer readable storage medium of claim 23, further comprising:

if said first required ~~requested~~ quantity is greater than Qatp less Qatf ~~(Qatp-Qatf)~~, allocating Qatp less Qatf ~~(Qatp-Qatf)~~ on said first ~~requested~~ required date from all of said plurality of member items and ~~(Qreq - Qatp + Qatf)~~ allocating Qreq minus Qatp less Qatf at an end day of said ATF duration from said first member item,

if said first ~~requested~~ required quantity is less than or equal to Qatp less Qatf ~~(Qatp-Qatf)~~, allocating said first ~~requested~~ required quantity on said ATP date,

wherein Qatp represents the aggregate available units as of said ATP date from all of said plurality of member items, Qatf represents the aggregate available units of said first member item at the end of said ATF duration, and Qreq equals said first ~~requested~~ required quantity.

Claim 26 (Currently Amended): The computer readable storage medium of claim 23, further comprising:

checking whether an override flag is associated with said first order; and

accepting said first order if said override flag is associated with said first order even if said determining determines that at least said first required quantity ~~of all of said plurality of member items is not scheduled to be available~~ cannot be fulfilled as of said first required date,

wherein said computing and accepting with said promise date are performed only if said override flag is not associated with said first order.

Claim 27 (Currently Amended): The computer readable storage medium of claim 26, further comprising rejecting said order if said override flag is not associated with said first order and if said ATP date is not acceptable to a user placing said first order.

Claim 28 (Currently Amended): The computer readable storage medium of claim 26, if said override flag is associated with said first order, further comprising:

allocating <u>Qreq less Qatf</u> ~~(Qreq-Qatf)~~ on said first requested date and Qatf on the last day of said ATF duration, wherein Qatf represents the aggregate available units of said first member item at the end of said ATF duration, and Qreq equals said first ~~requested~~ <u>required</u> quantity.

Claim 29 (Currently Amended): The computer readable <u>storage</u> medium of claim 22, further comprising:

computing in said computer system <u>said first available quantity as an aggregate of</u> a present family availability<u>, indicated by</u> ~~indicating~~ an aggregate quantity of <u>all of</u> said plurality of member items available on <u>each day after said ATF duration, as of</u> said first required date; and

allocating in said computer system a first portion from said present family availability and a second portion from <u>said second available</u> quantity scheduled to be available for said first member item as of end of said ATF duration.

Claim 30 (<u>Currently Amended</u>): The computer readable <u>storage</u> medium of claim 29, further comprising:

computing in said computer system ~~a cumulative item~~ <u>an aggregate</u> availability for said first member item ~~in~~ <u>for</u> each day ~~in~~ <u>as of end of</u> said ATF duration <u>in order to compute said second available quantity;</u> ~~and~~

maintaining in said computer system said present family availability associated with each day after said ATF duration<u>; and</u>[[,]]

<u>computing a cumulative item availability for each day after the ATF duration as the sum of said second available quantity and aggregate of said present family availability as of that day,</u>

wherein said determining comprises examining said cumulative item availability and said present family availability such that said determining can be performed quickly.

Claim 31 (Currently Amended): The computer readable <u>storage</u> medium of claim [[29]] <u>30</u>, wherein said determining comprises:

performing a first comparison of said first <u>required</u> quantity and [[(]] <u>difference of</u> said ~~present family~~ <u>cumulative item</u> availability as of said required date [[-]] <u>and</u> said

~~cumulative item availability at~~ second available quantity as of the end of said ATF duration~~;), wherein ' ' indicates a subtraction operation;~~

if said first comparison provides a less than result, said second portion equaling 0, and said first portion being allocated from <u>aggregate of</u> said present family availability ~~on~~ <u>as of</u> said first required date; and

if said first comparison provides a greater than or equal to result, said first portion equaling [[(]] <u>difference of</u> said ~~present family~~ <u>cumulative item</u> availability as of said required date [[-]] <u>and</u> said ~~cumulative item availability at~~ <u>available second quantity as of</u> the end of said ATF duration[[)]], and said second portion equaling said ~~required~~ <u>first required</u> quantity less said first portion.

Claim 32 (Currently Amended): The computer readable <u>storage</u> medium of claim 22, further comprising:

receiving in said computer system a third order specifying a third quantity of said first member item and a third required date, wherein said third required date is within said ATF duration, wherein said third quantity is less than or equal to said ~~cumulative item availability~~ <u>second available quantity of said first member item as</u> on said third required date; and

promising in said computer system that said third order can be promised.

Claim 33 (Currently Amended): The computer readable <u>storage</u> medium of claim 22, further comprising:

receiving in said computer system a fourth order specifying a fourth quantity of said first member item and a fourth required date, wherein said fourth required date is within said ATF duration, wherein said fourth quantity is greater than said ~~cumulative item availability~~ <u>second available quantity of said first member item as</u> on said fourth required date;

determining said ~~cumulative item availability (Qatf)~~ <u>second available quantity,</u> <u>Qatf,</u> at the end of said ATF duration;

checking if said fourth quantity is less than or equal to said Qatf; and

if said fourth quantity is less than or equal to said Qatf, checking in said computer system whether a first override flag is associated with said fourth order, and allocating said fourth quantity on said fourth required date if said first override flag is associated

with said fourth order.

Claim 34 (Currently Amended): The computer readable <u>storage</u> medium of claim 33, if said fourth quantity is less than or equal to said Qatf and if said override flag is not associated with said fourth order, further comprising:

determining a date Xatp on which said fourth quantity is available; and

accepting said fourth order only <u>if</u> a promise date of said Xatp is acceptable to a user placing said fourth order.

Claim 35 (Currently Amended): The computer readable <u>storage</u> medium of claim 34, further comprising rejecting said fourth order if said override flag is not associated with said fourth order and if said Xatp is not acceptable as said promise date to said user.

Claim 36 (Currently Amended): The computer readable <u>storage</u> medium of claim 33, if said fourth quantity is greater than said Qatf, further comprising:

checking whether an override flag is associated with said fourth order;

if said override flag is associated with said fourth order, allocating Qatf on said fourth required date and [[(]] <u>said</u> fourth required quantity less said Qatf [[)]] on a day following said ATF duration.

Claim 37 (Currently Amended): The computer readable <u>storage</u> medium of claim 36, if said fourth quantity is greater than said Qatf and if said override flag is not associated with said fourth order, further comprising:

computing in said computer system a date <u>Xatp</u> ~~(Xatp)~~ after said fourth required date and a corresponding Qatp on which said fourth quantity is available;

checking in the said computer system whether said Xatp is acceptable as a promise date; and

rejecting said fourth order [[is]] <u>if</u> said Xatp is not acceptable as a promise date.

Claim 38 (Currently Amended): The computer readable <u>storage</u> medium of claim 37, if said Xatp is acceptable as a promise date, further comprising:

performing a fourth comparison in said computer system to determine whether said fourth quantity is less than or equal to <u>Qatp minus Qatf;</u> ~~(Qatp-Qatf);~~

if said fourth quantity is less than $\underline{\text{Qatp minus Qatf}}$ ~~(Qatp-Qatf)~~, allocating said fourth quantity on said ATP date;

if said fourth quantity is greater than $\underline{\text{Qatp minus Qatf}}$ ~~(Qatp-Qatf)~~, allocating said $\underline{\text{Qatp minus Qatf}}$ ~~(Qatp-Qatf)~~ on said ATP date and [[(]]said fourth quantity [[-]] $\underline{\text{minus}}$ Qatp $\underline{\text{plus}}$ [[+]] Qatf[[)]] on last day of said ATF duration.

Claim 39 (Currently Amended): The computer readable $\underline{\text{storage}}$ medium of claim 22, further comprising:

receiving a request to un-schedule one of a previously promised orders;

determining whether said previously promised order is based on a tenth quantity scheduled to be available within said ATF duration;

using said tenth quantity to meet unmet demands related to the same member item as the member item for which said previously promised order relates to.

Claim 40 (Currently Amended): The computer readable $\underline{\text{storage}}$ medium of claim 39, further comprising:

determining whether said previously promised order is based on an eleventh quantity scheduled to be available after said ATF duration;

using said tenth quantity to meet unmet demands related to any of said plurality of member items.

Claim 41 (Currently Amended): A computer system supporting a Supply Chain Management (SCM) system processing orders related to a family of products in said SCM system, said family of products containing a plurality of member items, $\underline{\text{said}}$ $\underline{\text{plurality of member items having similarities in resource requirements,}}$ said computer system being operable to:

receive in a computer system a time fence (TF) duration associated with each of said plurality of member items ~~in relation to a~~ $\underline{\text{in pair with a}}$ first member item, wherein said first member item is also contained in said plurality of member items $\underline{\text{of said family,}}$ $\underline{\text{wherein}}$ said TF duration $\underline{\text{associated with a member item in pair with said first member}}$ $\underline{\text{item represents}}$ ~~representing~~ an amount of advance time duration after which the supply of ~~the corresponding~~ $\underline{\text{that}}$ member item is available to satisfy the demand for said first member item;

receive in said computer system a first order specifying a first <u>required</u> quantity of said first member item and a first required date, wherein said first required date is after said TF duration from a time said first order is received, and wherein only Qavail units of said first member item are scheduled to be available as of said first required date, wherein Qavail is less than said first <u>required</u> quantity;

determine in said computer system ~~whether at least said first quantity~~ <u>a first available quantity</u> of all of said plurality of member items ~~is~~ scheduled to be available <u>after said TF duration and</u> as of said first required date<u>, and a second available quantity of said first member item scheduled to be available as of end of said TF duration;</u> and

~~promising~~ <u>indicate</u> in said computer system <u>that</u> said first order <u>be promised</u> if said determining determines that <u>said first available quantity and said second available quantity</u> ~~at least said first quantity of all of said plurality of member items is~~ scheduled to be available as of said first required date <u>is sufficient to fulfill said first required quantity</u>.

Claim 42 (Currently Amended): The computer system of claim 41, wherein <u>said TF duration equals aggregate TF (ATF) duration when</u> said TF duration is equal for all pairs of member items<u>.</u> ~~contained in said plurality of member items, and wherein said TF duration equals aggregate TF (ATF) duration~~.

Claim 43 (Currently Amended): The computer system of claim 42, if said determine determines that at least said first <u>required</u> quantity of all of said plurality of member items is not scheduled to be available as of said first required date, said computer system being further operable to:

compute an ATP date in which said first <u>required</u> quantity of said first member item will be available based on <u>said available first required quantity and said available second quantity; and</u> ~~availability of number of units of said member item available as of the end of said ATF duration and number of units of all of said plurality of member items after said ATF duration; and~~

accept said first order with a promise date equaling said ATP date.

Claim 44 (Original): The computer system of claim 43, wherein a user is provided an option to indicate whether said ATP date is acceptable, wherein said accept is performed only if said user indicates that said ATP date is acceptable.

Claim 45 (Currently Amended): The computer system of claim 43, said computer system being further operable to:

if said first required ~~requested~~ quantity is greater than Qatp less Qatf ~~(Qatp-Qatf)~~, ~~allocating~~ allocate Qatp less Qatf ~~(Qatp-Qatf)~~ on said first ~~requested~~ required date from all of said plurality of member items and ~~(Qreq – Qatp + Qatf)~~ allocating Qreq minus Qatp less Qatf at an end day of said ATF duration from said first member item,

if said first required ~~requested~~ quantity is less than or equal to Qatp less Qatf ~~(Qatp-Qatf)~~, allocate said first required ~~requested~~ quantity on said ATP date,

wherein Qatp represents the aggregate available units as of said ATP date from all of said plurality of member items, Qatf represents the aggregate available units of said first member item at the end of said ATF duration, and Qreq equals said first required ~~requested~~ quantity.

46 (Currently Amended): The computer system of claim 43, said computer system being further operable to:

check whether an override flag is associated with said first order; and

accept said first order if said override flag is associated with said first order even if said determining determines that at least said first required quantity ~~of all of said plurality of member items is not scheduled to be available~~ cannot be fulfilled as of said first required date,

wherein said computing and accepting with said promise date are performed only if said override flag is not associated with said first order.

Claim 47 (Original): The computer system of claim 46, said computer system being further operable to reject said order if said override flag is not associated with said first order and if said ATP date is not acceptable to a user placing said first order.

Claim 48 (Currently Amended): The computer system of claim 46, if said override flag is associated with said first order, said computer system being further operable to:

allocate Qreq less Qatf ~~(Qreq-Qatf)~~ on said first requested date and Qatf on the last day of said ATF duration, wherein Qatf represents the aggregate available units of said

first member item at the end of said ATF duration, and Qreq equals said first ~~requested~~ required quantity.

Claim 49 (Currently Amended): The computer system of claim 42, said computer system being further operable to:

compute in said computer system <u>said first available quantity as an aggregate of</u> a present family availability<u>, indicated by</u> ~~indicating~~ an aggregate quantity of <u>all of</u> said plurality of member items available <u>on each day after said ATF duration, as of</u> ~~on~~ said first required date; and

allocate in said computer system a first portion from said present family availability and a second portion from <u>said second available</u> quantity scheduled to be available for said first member item as of end of said ATF duration.

Claim 50 (Currently Amended): The computer system of claim 49, said computer system being further operable to:

~~comput~~ <u>compute</u> in said computer system ~~a cumulative item~~ <u>an aggregate of</u> availability for said first member item ~~in~~ <u>for</u> each day ~~in~~ <u>as of end of</u> said ATF duration <u>in order to compute said second available quantity</u>~~;~~ ~~and~~

~~maintaining~~ <u>maintain</u> in said computer system said present family availability associated with each day after said ATF duration<u>; and</u>[[,]]

<u>compute a cumulative item availability for each day after the ATF duration as the sum of said second available quantity and aggregate of said present family availability as of that day,</u>

wherein said determine comprises examining said cumulative item availability and said present family availability such that said determining can be performed quickly.

Claim 51 (Currently Amended): The computer system of claim [[49]] <u>50</u>, wherein said determine comprises:

performing a first comparison of said first <u>required</u> quantity and [[(]] <u>difference of</u> said ~~present family~~ <u>cumulative item</u> availability as of said required date [[-]] <u>and</u> said ~~cumulative item availability at~~ <u>second available quantity as of</u> the end of said ATF duration<u>;</u>~~), wherein ' ' indicates a subtraction operation;~~

if said first comparison provides a less than result, said second portion equaling 0, and said first portion being allocated from underline(aggregate of) said present family availability ~~on~~ underline(as of) said first required date; and

if said first comparison provides a greater than or equal to result, said first portion equaling [[(]] underline(difference of) said ~~present family~~ underline(cumulative item) availability as of said required date [[-]] underline(and) said ~~cumulative item availability at~~ underline(available second quantity as of) the end of said ATF duration[[)]], and said second portion equaling said ~~required~~ underline(first required) quantity less said first portion.

Claim 52 (Currently Amended): The computer system of claim 42, said computer system being further operable to:

receive in said computer system a third order specifying a third quantity of said first member item and a third required date, wherein said third required date is within said ATF duration, wherein said third quantity is less than or equal to said ~~cumulative item availability~~ second available quantity of said first member item as on said third required date; and

promise in said computer system that said third order can be promised.

Claim 53 (Currently Amended): The computer system of claim 42, said computer system being further operable to:

receive in said computer system a fourth order specifying a fourth quantity of said first member item and a fourth required date, wherein said fourth required date is within said ATF duration, wherein said fourth quantity is greater than said ~~cumulative item availability~~ second available quantity of said first member item as on said fourth required date;

determine said ~~cumulative item availability (Qatf)~~ second available quantity, Qatf, at the end of said ATF duration;

check if said fourth quantity is less than or equal to said Qatf; and

if said fourth quantity is less than or equal to said Qatf, checking in said computer system whether a first override flag is associated with said fourth order, and allocate said fourth quantity on said fourth required date if said first override flag is associated with said fourth order.

Claim 54 (Original): The computer system of claim 53, if said fourth quantity is less than or equal to said Qatf and if said override flag is not associated with said fourth order, said computer system being further operable to:

determine a date Xatp on which said fourth quantity is available; and

accept said fourth order only if a promise date of said Xatp is acceptable to a user placing said fourth order.

Claim 55 (Original): The computer system of claim 54, said computer system being further operable to reject said fourth order if said override flag is not associated with said fourth order and if said Xatp is not acceptable as said promise date to said user.

Claim 56 (Currently Amended): The computer system of claim 53, if said fourth quantity is greater than said Qatf, said computer system being further operable to:

check whether an override flag is associated with said fourth order;

if said override flag is associated with said fourth order, allocate Qatf on said fourth required date and [[(]] said fourth required quantity less said Qatf[[)]] on a day following said ATF duration.

Claim 57 (Currently Amended): The computer system of claim 56, if said fourth quantity is greater than said Qatf and if said override flag is not associated with said fourth order, said computer system being further operable to:

compute in said computer system a date (Xatp) Xatp after said fourth required date and a corresponding Qatp on which said fourth quantity is available;

check in the said computer system whether said Xatp is acceptable as a promise date; and

reject said fourth order [[is]] if said Xatp is not acceptable as a promise date.

Claim 58 (Currently Amended): The computer system of claim 57, if said Xatp is acceptable as a promise date, said computer system being further operable to:

perform a fourth comparison in said computer system to determine whether said fourth quantity is less than or equal to Qatp minus Qatf; (Qatp-Qatf);

if said fourth quantity is less than Qatp minus Qatf (Qatp-Qatf), allocate said fourth quantity on said ATP date;

if said fourth quantity is greater than <u>Qatp minus Qatf</u> <s>(Qatp-Qatf)</s>, allocate said <u>Qatp minus Qatf</u> <s>(Qatp-Qatf)</s> on said ATP date and [[(]] said fourth quantity [[-]] <u>minus</u> Qatp <u>plus</u> [[+]] Qatf [[)]] on last day of said ATF duration.

Claim 59 (Original):   The computer system of claim 42, said computer system being further operable to:

receive a request to un-schedule one of a previously promised orders;

determine whether said previously promised order is based on a tenth quantity scheduled to be available within said ATF duration;

use said tenth quantity to meet unmet demands related to the same member item as the member item for which said previously promised order relates to.

Claim 60 (Original):   The computer system of claim 59, said computer system being further operable to:

determine whether said previously promised order is based on an eleventh quantity scheduled to be available after said ATF duration;

use said tenth quantity to meet unmet demands related to any of said plurality of member items.

Claim 61 (Currently Amended):   A computer system supporting a Supply Chain Management (SCM) system processing orders related to a family of products in said SCM system, said family of products containing a plurality of member items, <u>said plurality of member items having similarities in resource requirements,</u> said computer system comprising:

means for receiving in a computer system a time fence (TF) duration associated with each of said plurality of member items <s>in relation to a</s> <u>in pair with a</u> first member item, wherein said first member item is also contained in said plurality of member items <u>of said family, wherein</u> said TF duration <u>associated with a member item in pair with said first member item represents</u> <s>representing</s> an amount of advance time duration after which the supply of <s>the corresponding</s> <u>that</u> member item is available to satisfy the demand for said first member item;

means for receiving a first order specifying a first <u>required</u> quantity of said first member item and a first required date, wherein said first required date is after said ATF

duration from a time said first order is received, and wherein only Qavail units of said first member item are scheduled to be available as of said first required date, wherein Qavail is less than said first <u>required</u> quantity;

means for determining ~~whether at least said first quantity~~ <u>a first available quantity</u> of all of said plurality of member items ~~is~~ scheduled to be available <u>after said TF duration</u> <u>and</u> as of said first required date<u>, and a second available quantity of said first member item scheduled to be available as of end of said TF duration</u>; ~~and~~

means for <u>indicating</u> ~~promising~~ <u>that</u> said first order <u>be promised</u> if said means for determining determines that <u>said first available quantity and said second available quantity</u> ~~at least said first quantity of all of said plurality of member items is~~ scheduled to be available as of said first required date <u>is sufficient to fulfill said first required quantity, wherein said means for said indicating further comprises means for allocating a maximum portion of said first required quantity from said first available quantity and allocating said first required quantity minus said maximum portion from said second available quantity.</u>

Claim 62 (Currently Amended): The computer system of claim 61, wherein <u>said TF duration equals aggregate TF (ATF) duration when</u> said TF duration is equal for all pairs of member items<u>.</u> ~~contained in said plurality of member items, and wherein said TF duration equals aggregate TF (ATF) duration~~.

Claim 63 (Currently Amended): The computer system of claim 62, if said means determining determines that at least said first <u>required</u> quantity of all of said plurality of member items is not scheduled to be available as of said first required date, said computer system further comprising:

means for computing an ATP date in which said first <u>required</u> quantity of said first member item will be available based on <u>said available first required quantity and said available second quantity; and</u> ~~availability of number of units of said member item available as of the end of said ATF duration and number of units of all of said plurality of member items after said ATF duration; and~~

means for accepting said first order with a promise date equaling said ATP date.

Claim 64 (Original): The computer system of claim 63, wherein a user is provided an option to indicate whether said ATP date is acceptable, wherein said means for accepting accepts said first order only if said user indicates that said ATP date is acceptable.

Claim 65 (Currently Amended): The computer system of claim 63, further comprising:

if said first $\underline{\text{required}}$ ~~requested~~ quantity is greater than $\underline{\text{Qatp less Qatf}}$ ~~(Qatp-Qatf)~~, means for allocating $\underline{\text{Qatp less Qatf}}$ ~~(Qatp-Qatf)~~ on said first ~~requested~~ $\underline{\text{required}}$ date from all of said plurality of member items and ~~(Qreq - Qatp + Qatf)~~ $\underline{\text{allocating Qreq minus}}$ $\underline{\text{Qatp less Qatf}}$ at an end day of said ATF duration from said first member item,

if said first $\underline{\text{required}}$ ~~requested~~ quantity is less than or equal to $\underline{\text{Qatp less Qatf}}$ ~~(Qatp-Qatf)~~, means for allocating said first $\underline{\text{required}}$ ~~requested~~ quantity on said ATP date,

wherein Qatp represents the aggregate available units as of said ATP date from all of said plurality of member items, Qatf represents the aggregate available units of said first member item at the end of said ATF duration, and Qreq equals said first $\underline{\text{required}}$ ~~requested~~ quantity.

Claim 66 (Currently Amended): The computer system of claim 63, further comprising:

means for checking whether an override flag is associated with said first order; and

means for accepting said first order if said override flag is associated with said first order even if said determining determines that at least said first $\underline{\text{required}}$ quantity ~~of all of said plurality of member items is not scheduled to be available~~ $\underline{\text{cannot be fulfilled}}$ as of said first required date,

wherein said computing and accepting with said promise date are performed only if said override flag is not associated with said first order.

Claim 67 (Original): The computer system of claim 66, further comprising means for rejecting said order if said override flag is not associated with said first order and if said ATP date is not acceptable to a user placing said first order.

Claim 68 (Currently Amended): The computer system of claim 66, if said override flag is associated with said first order, further comprising:

means for allocating allocating <u>Qreq less Qatf</u> (Qreq Qatf) on said first requested date and Qatf on the last day of said ATF duration, wherein Qatf represents the aggregate available units of said first member item at the end of said ATF duration, and Qreq equals said first requested <u>required</u> quantity.

Claim 69 (Currently Amended): The computer system of claim 62, further comprising:

means for computing in said computer system <u>said first available quantity as an aggregate of</u> a present family availability<u>, indicated by</u> indicating an aggregate quantity of <u>all of</u> said plurality of member items available on <u>each day after said ATF duration, as of</u> said first required date; and

means for allocating in said computer system a first portion from said present family availability and a second portion from <u>said second available</u> quantity scheduled to be available for said first member item as of end of said ATF duration.

Claim 70 (Currently Amended): The computer system of claim 69, further comprising:

means for computing in said computer system a cumulative item <u>an aggregate of</u> availability for said first member item in <u>for</u> each day in <u>as of end of</u> said ATF duration <u>in order to compute said second available quantity;</u> and

maintaining in said computer system said present family availability associated with each day after said ATF duration<u>; and</u>[[,]]

<u>computing a cumulative item availability for each day after the ATF duration as the sum of said second available quantity and aggregate of said present family availability as of that day,</u>

wherein said determining comprises examining said cumulative item availability and said present family availability such that said determining can be performed quickly.

Claim 71 (Currently Amended): The computer system of claim [[69]] <u>70</u>, wherein said determining comprises:

means for performing a first comparison of said first <u>required</u> quantity and [[(]] <u>difference of</u> said ~~present family~~ <u>cumulative item</u> availability as of said required date [[-]] and said ~~cumulative item availability at~~ <u>second available quantity as of</u> the end of said ATF duration<u>;</u>~~), wherein '-' indicates a subtraction operation;~~

if said first comparison provides a less than result, said second portion equaling 0, and said first portion being allocated from <u>aggregate of</u> said present family availability ~~on~~ <u>as of</u> said first required date; and

if said first comparison provides a greater than or equal to result, said first portion equaling [[(]] <u>difference of</u> said ~~present family~~ <u>cumulative item</u> availability as of said required date [[-]] <u>and</u> said ~~cumulative item availability at~~ <u>available second quantity as of</u> the end of said ATF duration[[)]], and said second portion equaling said required <u>first required</u> quantity less said first portion.

Claim 72 (Currently Amended):   The computer system of claim 62, further comprising:

means for receiving in said computer system a third order specifying a third quantity of said first member item and a third required date, wherein said third required date is within said ATF duration, wherein said third quantity is less than or equal to said ~~cumulative item availability~~ <u>second available quantity of said first member item as</u> on said third required date; and

means for promising in said computer system that said third order can be promised.

Claim 73 (Currently Amended):   The computer system of claim 62, further comprising:

means for receiving in said computer system a fourth order specifying a fourth quantity of said first member item and a fourth required date, wherein said fourth required date is within said ATF duration, wherein said fourth quantity is greater than said ~~cumulative item availability~~ <u>second available quantity of said first member item as</u> on said fourth required date;

means for determining said ~~cumulative item availability (Qatf)~~ <u>second available quantity, Qatf,</u> at the end of said ATF duration;

means for checking if said fourth quantity is less than or equal to said Qatf; and

if said fourth quantity is less than or equal to said Qatf, means for checking in said computer system whether a first override flag is associated with said fourth order, and allocating said fourth quantity on said fourth required date if said first override flag is associated with said fourth order.

Claim 74 (Original): The computer system of claim 73, if said fourth quantity is less than or equal to said Qatf and if said override flag is not associated with said fourth order, further comprising:

means for determining a date Xatp on which said fourth quantity is available; and

means for accepting said fourth order only if a promise date of said Xatp is acceptable to a user placing said fourth order.

Claim 75 (Original): The computer system of claim 74, further comprising means for rejecting said fourth order if said override flag is not associated with said fourth order and if said Xatp is not acceptable as said promise date to said user.

Claim 76 (Currently Amended): The computer system of claim 73, if said fourth quantity is greater than said Qatf, further comprising:

means for checking whether an override flag is associated with said fourth order;

if said override flag is associated with said fourth order, means for allocating Qatf on said fourth required date and [[(]] said fourth required quantity less said Qatf[[)]] on a day following said ATF duration.

Claim 77 (Currently Amended): The computer system of claim 76, if said fourth quantity is greater than said Qatf and if said override flag is not associated with said fourth order, said computer system comprising:

means for computing in said computer system a date (Xatp) Xatp after said fourth required date and a corresponding Qatp on which said fourth quantity is available;

means for checking in the said computer system whether said Xatp is acceptable as a promise date; and

means for rejecting said fourth order [[is]] if said Xatp is not acceptable as a promise date.

Claim 78 (Currently Amended): The computer system of claim 77, if said Xatp is acceptable as a promise date, further comprising:

means for performing a fourth comparison in said computer system to determine whether said fourth quantity is less than or equal to <u>Qatp minus Qatf;</u> ~~(Qatp-Qatf);~~

if said fourth quantity is less than <u>Qatp minus Qatf</u> ~~(Qatp-Qatf)~~, allocating said fourth quantity on said ATP date;

if said fourth quantity is greater than <u>Qatp minus Qatf</u> ~~(Qatp-Qatf)~~, allocating said <u>Qatp minus Qatf</u> ~~(Qatp-Qatf)~~ on said ATP date and [[(]] said fourth quantity [[-]] <u>minus</u> Qatp <u>plus</u> [[+]] Qatf [[)]] on last day of said ATF duration.

Claim 79 (Original): The computer system of claim 62, further comprising:

means for receiving a request to un-schedule one of a previously promised orders;

means for determining whether said previously promised order is based on a tenth quantity scheduled to be available within said ATF duration;

means for using said tenth quantity to meet unmet demands related to the same member item as the member item for which said previously promised order relates to.

Claim 80 (Original): The computer system of claim 79, further comprising:

means for determining whether said previously promised order is based on an eleventh quantity scheduled to be available after said ATF duration;

means for using said tenth quantity to meet unmet demands related to any of said plurality of member items.